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10/584,392	02/22/2007	Alwyn John Seeds	ZIN-002	903I

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EXAMINER

PEACE, RHONDA S

ART UNIT

PAPER NUMBER

2874

NOTIFICATION DATE

DELIVERY MODE

11/03/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/584,392

**Applicant(s)**

SEEDS ET AL.

**Examiner**

Rhonda S. Peace

**Art Unit**

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 15, 16, 24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 15, 16, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/28/2008
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 7/28/2008 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

The replacement drawings were received on 7/28/2008. These drawings are suitable for publication.

### ***Claim Objections***

Claim 3 recites the limitation "the or each optical radiation transmitter" in line 1. There is insufficient antecedent basis for this limitation in the claim. From the Applicant's disclosure, it is apparent the transmitter(s) of claim 3 are those transmitter(s) producing the first and second light waves of claim 1.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-6, 15, 16, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuh et al ("Penalty Free Simultaneous 1 Gbit/S Digital and GSM-1800 Radio Signal Transmission Over 600 M Multimode Fibre Using 850 nm VCSEL Sources," cited in the IDS filed 3/22/2007), in further view of Raddatz et al ("An Experimental and Theoretical Study of the Offset Launch Technique for Enhancement of the Bandwidth of Multimode Fiber Links," cited in the IDS filed 6/23/2006).**

Pertaining to claims 1 and 4, Schuh et al discloses a method co-propagating first light waves representing 1 Gbit/s electrical baseband signals and second light waves representing electrical signals modulated onto an RF carrier operating at 1800 MHz, wherein the baseband and modulated carrier signals are simultaneously transmitted over a multimode optical fiber by a VCSEL laser source. The combiner of Figure 1

receives and combines the electrical baseband signals and the electrical signals modulated onto an RF carrier for simultaneous transmission over the multimode fiber. The VCSEL receives the combined signal from the combiner and transforms the combined signal into an optical signal, wherein the optical signal is then transmitted along the multimode fiber resulting in light wave components representing the 1Gbit/s signal and light wave components representing the RF signal are simultaneously transmitted along the length of multimode fiber. See Figure 1, abstract, and page 1, col. 2 lines 5-22. However, Schuh et al does not disclose a coupler for launching the optical signal into the multimode fiber in such a manner to restrict the number of excited propagation modes within the multimode fiber, such that noise within the multimode fiber, due to the simultaneous transmission, is suppressed.

Further pertaining to claims 1 and 4, Raddatz et al discloses the method of launching a signal into a multimode fiber such that the number of excited propagation modes within the multimode fiber are restricted, thereby suppressing noise within the signal. See abstract, page 1, col. 2 lines 30-44. Raddatz et al discloses the use of a single-mode fiber as a coupler to launch the optical signal into the multimode fiber as seen in Figure 4. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method of suppressing noise as taught by Raddatz et al with the method of simultaneously transmitting baseband and RF signals as taught by Schuh et al, as Raddatz et al discloses such a method increases bandwidth up to four times due to the suppression of noise. See Raddatz et al, page 1, col. 2 lines 21-30. Schuh et al discloses their method of simultaneously transmitting

baseband and RF signals, thereby enabling the use of two transmission technologies, will enable new ways for combined services and coverage for customers (see Schuh et al, page 1, col. 1 lines 7-24), and therefore the teachings of Raddatz et al which allow for increased bandwidth due to a launching technique that restricts the number of excited propagation modes, is particularly applicable, as the method of Raddatz et al further expands the capabilities of the networks as described by Schuh et al.

Addressing claims 2, 3, 5, and 6, Schuh et al, in view of Raddatz et al, disclose the method and network system as described above. Raddatz et al further discloses the above-described method of launching an optical signal into a multimode fiber such that the number of excited propagation modes is restricted is implemented by launching the optical signal co-linear to, but off-set from, the fiber axis. See Raddatz et al, page 1, col. 2 lines 30-41. More specifically, the optical signal may be launched from a single-mode fiber acting as a coupler into a multimode fiber having a core diameter of 62.5 microns, wherein the off-set measures approximately 18 to 28 microns as measured from the fiber's center to the launching spot (See Figure 1). See Raddatz et al, page 5 col. 1 lines 6-16. Schuh et al discloses the transmitter as seen in Figure 1 has a linear frequency response such that the transmitter is responsive to both the RF signal from the GSM-1800 Base Station and the baseband signal from the digital pattern generator. See Schuh et al, page 1, col. 2 lines 5-12.

Concerning claims 24 and 25, Schuh et al, in view of Raddatz et al, disclose the method and network system as described above. As discussed above, Schuh et al discloses a transmitter to transform the baseband signals and RF signals into a

corresponding optical signal. Moreover, Schuh et al discloses a PIN-photodiode to transform the optical signal emitted from the multimode fiber into an electrical signal. See page 1, col. 2 lines 13-21.

Addressing claims 15 and 16, Schuh et al, in view of Raddatz et al, disclose the method and network system as described above. Neither Schuh et al nor Raddatz et al disclose employing multimode fiber splitters to split the optical signal on a single multimode fiber to multiple multimode fibers for onward transmission. Moreover, neither Schuh et al nor Raddatz et al disclose employing multimode fiber combiners to combine the optical signals on multiple multimode fibers to a single multimode fiber for onward transmission. However, the use of combiners and splitters to either combine multiple signals on multiple fibers onto a single fiber, or split a signal on a single fiber into multiple signals for transmission along multiple fibers is well-known and widely used in optical networks, such as the consumer networks as discussed above by Schuh et al, as such methods allow for the expansion and customization of an optical network, such that optical signals may be provided to a plurality of customers, and also such that a plurality of customers may each use optical signals to connect to a central hub. A person of ordinary skill has good reason to pursue the known options within their technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. *KSR International Co. v. Teleflex Inc.* 82 USPQ2d 1385 (2007).

***Response to Arguments***

Applicant's arguments, see pages 6-9, filed 7/28/2008, with respect to the rejection of claims under 35 USC 102(b) in view of Cunningham et al have been fully considered and are persuasive. The rejection of claims under 35 USC 102(b) in view of Cunningham et al has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the combined teachings of Schuh et al and Raddatz et al under 35 USC 103(a), as outlined above.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571) 272- 2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda S. Peace/  
Examiner, Art Unit 2874

/Michelle R. Connelly-Cushwa/  
Primary Examiner, Art Unit 2874